Federal Communications Commission
Gettysburg, PA 17326

RADIO STATION LICENSE

Licensee Name: VIRGINIA, COMMONWEALTH OF

Radio Service: PL LOCAL GOVERNMENT License Issue Date: 870331

Call Sign: KWI923 File Number: License Expiration Date: 920331

Frequency Advisory Number:

Number of Mobiles by Category: Vehicular - ***3** Portable - ***7** Aircraft - ****** Marine - ****** Pagers****10*

Station Technical Specifications

FCC I.D.	Frequencies (MHz)	Station Class	No. of Units	Emission Designator	Output Power (Watts)	E.R.P. (Watts)	Ground Elevation	Ant. Hgt. To Tip	Antenna Latitude	Antenna Longitude
1:	155.04000	FB2	1	20F3	100.000	0.0	122	78	38-18-02	077-28-20
2:	155.04000	MO	10	20F3	100.000	0.0				
	156.01500	MO	10	20F3	6.000	0.0				

	TRANSMITTER STREET ADDRESS	CITY	COUNTY	STATE
1:	GEORGE WASHINGTON HALL-CAMPUS DR	FREDERICKSBURG		VA

AREA OF OPERATION
SITE 2: VA VIC:FREDERICKSBURG

CONTROL POINTS:ADMIN BLDG MAINTENANCE DEPT SECURITY FR EDERICKSBURG VA

STATIONARY

870331R 559 1 1R
VIRGINIA, COMMONWEALTH OF
MARY WASHINGTON COLLEGE
1301 COLLEGE AVE
FREDERICKSBURG VA 22401

FEDERAL COMMUNICATIONS COMMISSION

This authorization becomes invalid and must be returned to the Commission if the stations are not placed in operation within eight months, unless an extension of time has been granted. EXCEPTION: 800 MHz trunked and certain 900 MHz station licenses cancel automatically if not constructed within one year.

FCC 574-L
JUNE 1986

CONDITIONS OF GRANT

A. Subject to the provisions of the Communications Act of 1934, as amended, subsequent acts, treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions and requirements set forth in this authorization the licensee or permittee hereof is authorized to use and operate the radio transmitting facilities herein described. This authorization shall not vest in the licensee or permittee any right to operate the station nor any right in the use of the frequencies designated in the authorization beyond the term hereof, nor in any other manner than authorized herein.

B. Neither this authorization nor the right granted herein shall be assigned or otherwise transferred to any person, firm, company, or corporation except by specific authorization of the Commission.

C. This authorization is issued on the licensee's representation that the statements contained in licensee's application are true and that the undertakings therein contained, so far as they are consistent herewith, will be carried out in good faith. The licensee shall, during the term of this license, render such service as will serve public interest, convenience, or necessity to the full extent of the privileges herein conferred.

D. This authorization is subject to the right of use or control by the Government of the United States conferred by Section 606 of the Communications Act of 1934, as amended.

NOTICE TO INDIVIDUALS REQUIRED BY PRIVACY ACT OF 1974 AND THE PAPERWORK REDUCTION ACT OF 1980

Sections 301, 303, and 308 of the Communications Act of 1934, as amended (licensing powers) authorized the FCC to request the information on this application. The purpose of the information is to determine your eligibility for a license. The information will be used by FCC staff to evaluate the application, to determine station location, to provide information for enforcement and rulemaking proceedings and to maintain a current inventory of licensees. No license can be granted unless all information requested is provided. Your response is required to obtain this authorization.

For FCC Use Only

SPECIAL CONDITIONS

1. Reserved.

2. No interference to be caused to co-channel Canadian or adjacent-channel U.S. radio stations.

3. Not to be used at any location north of Line "A" as described in Section 1.955 of the FCC Rules.

4. Antenna height and E.R.P. shall be the minimum required to provide radio coverage up to the Canadian border.

5. Med 1-8 subject to the provisions of Rule Section 90.53(b) (15).

6. This station to be used only for communications between members of the hospital network during times of emergencies.

7. This station is for disaster relief purposes and may only be used to transmit messages in accordance with Rule Section 90.41.

8. For medical ambulance dispatch only. Equipment authorized herein shall not be used in the performance of funeral or other routine operations.

9. Limited for coordinated use in cooperation with hospitals authorized on this frequency.

10. To be used for ambulance and rescue squad work only.

11. For intersystem operations only.

12. Operations authorized in accordance with the Railroad Frequency Assignment Plan.

13. Authorized in accordance with Rule Section 90.176.

14. Licensee has 90 days to continue operating under parameters of previous authorization.

15. Reserved.

16. Operations onboard aircraft are subject to the limitations set forth under Rule Section 90.423(a).

17. For nationwide use limited by Rule Section 90.19(e) (14). (Frequency 155.475 MHz.)

18. For intersystem communications as limited by Rule Section 90.19(g) (4).

19. Telephone interconnection with the wireline facilities of a telephone company is not authorized.

20. This system may not be used for fixed service purposes.

21. Telephone interconnection with the wireline facilities of a telephone company is authorized subject to the provisions of Rule Sections 90.476 through 90.483 as appropriate.

22. This grant does not extend the period within which you must place the station in operation or meet loading requirements. That period begins from the date of your original authorization.

23. This license is for demonstration purposes only and may not be used for day to day business activity. This system is for secondary use and the mobiles licensed herein will not count toward the total mobile loading of these frequencies.

24. Maximum allowable E.R.P. for control/mobile stations is 100.

25. Reserved.

26. This license utilizes shared facilities.

27. This is a shared use system.

28. 806-821 MHz may be used under parameters of Dockets 79-191 and 18262. (See Part 90, Subparts M & S)

29. 806-821 MHz and 851-866 MHz may only be used under the parameters of Dockets 79-191 and 18262. (See Part 90, Subparts M & S)

30. 470-512 MHz may be used only under the parameters of Docket 18261. (See Part 90, Subpart L)

31. The use of radio for demonstration purposes in connection with the sale of radio equipment is limited by the following conditions:

a. The equipment shall be under the control of the licensee at all times. Purchasers or prospective customers shall not be permitted to operate the equipment in any manner in the absence of authorized employees of the licensee.

b. No person other than the licensee shall use the assigned call signs.

c. No representation shall be made by the licensee to any person that a radio transmitter may be utilized prior to the issuance of an authorization by the Commission.

d. Demonstration of radio equipment and/or coverage surveys should be completed within a single day.

e. Equipment demonstrated under the terms of this license shall be on frequencies available under Part 90 of the Rules.

f. The technical parameters of the radio service in which the frequency(s) is allocated shall be observed.

32. Special Condition for operating interconnected facilities under the provisions of Rule Section 90.261: These frequencies are authorized on a secondary non-interference basis to land mobile operations; any unresolved interference resulting from operation on these frequencies will be cause for cancellation. The provisions of Rule Section 90.261 governing antenna directivity and minimum mileage criteria from urbanized areas must be strictly complied with. Antenna structures must fully meet the requirements of Special Condition #35. Transmissions must directly relate to those activities which constitute the licensee's eligibility. Personal communications are expressly forbidden.

33. Special Condition for operating interconnected facilities under the provisions of Rules Section 90.267: These frequencies are authorized for use on a secondary non-interference basis to regularly assigned adjacent channel operations at a maximum of two watts output power; interference resulting from operation on these frequencies will be cause for cancellation. The provisions of Rule Section 90.267 must be strictly complied with. Directional antennas must be used and their installed height may not exceed twenty (20) feet above ground. Transmissions must directly relate to those activities which constitute the licensee's eligibility. Personal communications are expressly forbidden.

34. 800 MHz Loading and Construction Instructions — This authorization is issued subject to these conditions. If this facility is not constructed within one year of the date of this grant, and has not been authorized an extended construction period, the license cancels automatically. If the two year, three year or five year mobile loading requirements applicable to this system (see 90.366 or 90.631, as appropriate) are not met, and if waiting lists for trunked frequencies exist in your geographic area of operation, this license cancels automatically. The Commission will, however, in these circumstances consider authorizing you for one channel (frequency pair) for each existing 100 mobile stations, or fraction thereof, operating on your previously authorized frequencies.

35. Antenna structures for land, base and fixed stations authorized in the Private Radio Bureau for operation at temporary unspecified locations may be erected without specific prior approval of the Commission where such antenna structures do not exceed a height of 200 feet above ground level; provided that the overall height of such antennas more than 20 feet above ground, including their supporting structures (whether natural formation or man-made), does not exceed a slope of 1 foot above the established airport elevation for each 100 feet of distance or fraction thereof from the nearest boundary of such airport. Any antenna to be erected in excess of the foregoing limitations requires prior Commission approval. Licensees seeking such approval should file application for modification of license. In addition, notification to the Federal Aviation Administration is required whenever the antenna will exceed 200 feet above the ground and whenever notification is otherwise required by Section 17.7 of the Commission's Rules. Such notification should be given by filing FAA Form 7460-1, Notice of Proposed Construction or Alteration, in duplicate, with the nearest office of the Federal Aviation Administration, which form is available from that office.

36. This license is issued subject to the following condition: Grant of this license is predicated upon Canadian indication that no harmful interference is anticipated to existing Canadian stations. Canada's determination was based upon the results of actual field test transmissions. If interference should arise due to operation of this station in non-conformance with the technical parameters actually employed in conducting the field test transmissions, this license shall automatically cancel and subsequent operations would be unlicensed.

37. Reserved.

38. Authorized on a secondary basis.

39. Any renewal of this authorization will require that the Commission recoordinate with IRAC.

40. For intersystem communication as limited by Rule Section 90.21(c) (2).

41. A license issued to a corporation or an association may not be used for personal communications; Rule Section 95.179(b).

SPECIAL CONDITIONS

CONDITIONS OF GRANT

1. Reserved.

2. No interference to be caused to co-channel Canadian or adjacent-channel U.S. radio stations.

3. Not to be used at any location north of Line "A" as described in Section 1.955 of the FCC Rules.

4. Antenna height and E.R.P. shall be the minimum required to provide radio coverage up to the Canadian border.

5. Met 1-8 subject to the provisions of Rule Section 90.53(b) (15).

6. This station to be used only for communications between members of the hospital network during times of emergencies.

7. This station is for disaster relief purposes and may only be used to transmit messages in accordance with Rule Section 90.417.

8. For medical ambulance dispatch only. Equipment authorized herein shall not be used in the performance of funeral or other routine operations.

9. Limited for coordinated use in cooperation with hospitals authorized on this frequency.

10. To be used for ambulance and rescue squad work only.

11. For intersystem operations only.

12. Operations authorized in accordance with the Railroad Frequency Assignment Plan.

13. Authorized in accordance with Rule Section 90.177.

14. Licensee has 30 days to continue operating under parameters of previous authorization.

15. Reserved.

16. Operations onboard aircraft are subject to the limitations set forth under Rule Section 90.424(a).

17. For nationwide use limited by Rule Section 90.19(e) (14).
(Frequency 155.475 MHz.)

18. For intersystem communications as limited by Rule Section 90.19(g) (4).

19. Telephone interconnection with the wireline facilities of a telephone company is not authorized.

20. This system may not be used for fixed service purposes.

21. Telephone interconnection with the wireline facilities of a telephone company is authorized subject to the provisions of Rule Sections 90.476 through 90.483 as appropriate.

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a. The equipment shall be under the control of the licensee at all times. Purchasers or prospective customers shall not be permitted to operate the equipment in any manner in the absence of authorized employees of the licensee.

b. No person other than the licensee shall use the assigned call signs.

c. No representation shall be made by the licensee to any person that a radio transmitter may be utilized prior to the issuance of an authorization by the Commission.

d. Demonstration of radio equipment and/or coverage surveys should be completed within a single day.

e. Equipment demonstrated under the terms of this license shall be on frequencies available under Part 90 of the Rules.

f. The technical parameters of the radio service in which the frequency(s) is allocated shall be observed.

32. Special Condition for operating interconnected facilities under the provisions of Rule Section 90.267: These frequencies are authorized on a secondary non-interference basis to land mobile operations; any unresolved interference resulting from operation on these frequencies will be cause for cancellation. The provisions of Rule Section 90.267 governing antenna directivity and minimum mileage criteria from urbanized areas must be strictly complied with. Antenna structures must fully meet the requirements of Special Condition #33. Transmissions must directly relate to those activities which constitute the licensee's eligibility. Personal communications are expressly forbidden.

33. Special Condition for operating interconnected facilities under the provisions of Rules Section 90.267: These frequencies are authorized for use on a secondary non-interference basis to regularly assigned adjacent channel operations at a maximum of two watts output power; interference resulting from operation on these frequencies will be cause for cancellation. The provisions of Rule Section 90.267 must be strictly complied with. Directional antennas must be used and their installed height may not exceed twenty (20) feet above ground. Transmissions must directly relate to those activities which constitute the licensee's eligibility. Personal communications are expressly forbidden.

34. 800 MHz Loading and Construction Instructions — This authorization is issued subject to these conditions. If this facility is not constructed within one year of the date of this grant, and has not been authorized an extended construction period, the license cancels automatically. If the two year, three year or five year mobile loading requirements applicable to this system (see 90.685 or 90.831, as appropriate) are not met, and it waiting lists for trunked frequencies exist in your geographic area of operation, this license cancels automatically. The Commission will, however, in these circumstances consider authorizing you for one channel (frequency pair) for each existing 100 mobile stations, or fraction thereof, operating on your previously authorized frequencies.

35. Antenna structures for land, base and fixed stations authorized in the Private Radio Bureau for operation at temporary unspecified locations may be erected without specific prior approval of the Commission where such antenna structures do not exceed a height of 200 feet above ground level; provided that the overall height of such antennas more than 20 feet above ground, including their supporting structures (whether natural formation or man-made), does not exceed a slope of 1 foot above the established airport elevation for each 100 feet of distance or fraction thereof from the nearest boundary of such airport. Any antenna to be erected in excess of the foregoing limitations requires prior Commission approval. Licensees seeking such approval should file application for modification of license. In addition, notification to the Federal Aviation Administration is required whenever the antenna will exceed 200 feet above the ground and whenever notification is otherwise required by Section 17.7 of the Commission's Rules. Such notification should be given by filing FAA Form 7460-1, Notice of Proposed Construction or Alteration, in duplicate, with the nearest office of the Federal Aviation Administration, which form is available from that office.

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40. For intersystem communication as limited by Rule Section 90.21(c) (2).

41. A licenses issued to a corporation or an association may not be used for personal communications; Rule Section 95.179(b).

OBSTRUCTION MARKING AND LIGHTING SPECIFICATIONS FOR ANTENNA STRUCTURES

It is to be expressly understood that the issuance of these specifications is in no way to be considered as precluding additional or modified marking or lighting as may hereafter be required under the provisions of Section 303(q) of the Communications Act of 1934, as amended.

PAINTING

1. Antenna structures shall be painted throughout their height with alternate bands of aviation surface orange and white, terminating with aviation surface orange bands at both top and bottom. The width of the bands shall be equal and approximately one-seventh the height of the structure, provided however, that the bands shall not be more than 100 feet nor less than 1½ feet in width. All towers shall be cleaned or repainted as often as necessary to maintain good visibility.

TOP LIGHTING

2. There shall be installed at the top of the tower at least two 116- or 125-watt lamps (A21/TS) enclosed in aviation red obstruction light globes. The two lights shall burn simultaneously from sunset to sunrise and shall be positioned so as to ensure unobstructed visibility of at least one of the lights from aircraft at any normal angle of approach. A light sensitive control device or an astronomic dial clock and time switch may be used to control the obstruction lighting in lieu of manual control. When a light sensitive device is used it should be adjusted so that the lights will be turned on at a north sky light intensity level of about thirty-five foot candles and turned off at a north sky light intensity level of about fifty-eight foot candles.

3. There shall be installed at the top of the structure one 300 m/m electric code beacon equipped with two 620- or 700-watt lamps (PS-40, Code Beacon type), both lamps to burn simultaneously, and equipped with aviation red color filters. Where a rod or other construction of not more than 20 feet in height and incapable of supporting this beacon is mounted on top of the structure and it is determined that this additional construction does not permit unobstructed visibility of the code beacon from aircraft at any normal angle of approach, there shall be installed two such beacons positioned so as to ensure unobstructed visibility of at least one of the beacons from aircraft at any normal angle of approach. The beacons shall be equipped with a flashing mechanism producing not more than 40 flashes per minute nor less than 12 flashes per minute with a period of darkness equal to approximately one-half of the luminous period.

INTERMEDIATE LIGHTING (BEACONS)

4. At approximately one-half of the overall height of the tower one similar flashing 300 m/m electric code beacon shall be installed in such a position within the tower proper that the structural members will not impair the visibility of this beacon from aircraft at any normal angle of approach. In the event this beacon cannot be installed in a manner to ensure unobstructed visibility of it from aircraft at any normal angle of approach, there shall be installed two such beacons. Each beacon shall be mounted on the outside of the tower at the prescribed height.

5. At approximately two-fifths of the overall height of the tower one similar flashing 300 m/m electric code beacon shall be installed in such position within the tower proper that the structural members will not impair the visibility of this beacon from aircraft at any normal angle of approach. In the event this beacon cannot be installed in a manner to ensure unobstructed visibility of it from aircraft at any normal angle of approach, there shall be installed two such beacons. Each beacon shall be mounted on the outside of diagonally opposite corners or opposite sides of the tower at the prescribed height.

6. On levels at approximately two-thirds and one-third of the overall height of the tower one similar flashing 300 m/m electric code beacon shall be installed in such position within the tower proper that the structural members will not impair the visibility of this beacon from aircraft at any normal angle of approach. In the event these beacons cannot be installed in a manner to ensure unobstructed visibility of the beacons from aircraft at any normal angle of approach, there shall be installed two such beacons at each level. Each beacon shall be mounted on the outside of diagonally opposite corners or opposite sides of the tower at the prescribed height.

7. On levels at approximately four-sevenths and two-sevenths of the overall height of the tower one similar flashing 300 m/m electric code beacon shall be installed in such position within the tower proper that the structural members will not impair the visibility of this beacon from aircraft at any normal angle of approach. In the event these beacons cannot be installed in a manner to ensure unobstructed visibility of the beacons from aircraft at any normal angle of approach, there shall be installed two such beacons at each level. Each beacon shall be mounted on the outside of diagonally opposite corners or opposite sides of the tower at the prescribed height.

8. On levels at approximately three-fourths, one-half and one-fourth of the overall height of the tower one similar flashing 300 m/m electric code beacon shall be installed in such position within the tower proper that the structural members will not impair the visibility of the beacon from aircraft at any normal angle of approach. In the event these beacons cannot be installed in a manner to ensure unobstructed visibility of the beacons from aircraft at any normal angle of approach, there shall be installed two such beacons at each level. Each beacon shall be mounted on the outside of diagonally opposite corners or opposite sides of the tower at the prescribed height.

9. On levels at approximately two-thirds, four-ninths and two-ninths of the overall height of the tower one similar flashing 300 m/m electric code beacon shall be installed in such position within the tower proper that the structural members will not impair the visibility of this beacon from aircraft at any normal angle of approach. In the event these beacons cannot be installed in a manner to ensure unobstructed visibility of the beacons from aircraft at any normal angle of approach, there shall be installed two such beacons at each level. Each beacon shall be mounted on the outside of diagonally opposite corners or opposite sides of the tower at the prescribed height.

10. On levels at approximately four-fifths, three-fifths, two-fifths and one-fifth of the overall height of the tower one similar flashing 300 m/m electric code beacon shall be installed in such position within the tower proper that the structural members will not impair the visibility of this beacon from aircraft at any normal angle of approach. In the event these beacons cannot be installed in a manner to ensure unobstructed visibility of the beacons from aircraft at any normal angle of approach, there shall be installed two such beacons at each level. Each beacon shall be mounted on the outside of diagonally opposite corners or opposite sides of the tower at the prescribed height.

10.1 On levels at approximately eight-elevenths, six-elevenths, four-elevenths and two-elevenths of the overall height of the tower one similar flashing 300 m/m electric code beacon shall be installed in such position within the tower proper that the structural members will not impair the visibility of this beacon from aircraft at any normal angle of approach. In the event these beacons cannot be installed in a manner to ensure unobstructed visibility of the beacons from aircraft at any normal angle of approach, there shall be installed two such beacons at each level. Each beacon shall be mounted on the outside of diagonally opposite corners or opposite sides of the tower at the prescribed height.

10.2 On levels at approximately five-sixths, two-thirds, one-half, one-third and one-sixth of the overall height of the tower one similar flashing 300 m/m electric code beacon shall be installed in such position within the tower proper that the structural members will not impair the visibility of this beacon from aircraft at any normal angle of approach. In the event these beacons cannot be installed in a manner to ensure unobstructed visibility of the beacons from aircraft at any normal angle of approach there shall be installed two such beacons at each level. Each beacon shall be mounted on the outside of diagonally opposite corners or opposite sides of the tower at the prescribed height.

10.3 On levels at approximately ten-thirteenths, eight-thirteenths, six-thirteenths, four-thirteenths and two-thirteenths of the overall height of the tower one similar flashing 300 m/m electric code beacon shall be installed in such position within the tower proper that the structural members will not impair the visibility of this beacon from aircraft at any normal angle of approach. In the event these beacons cannot be installed in a manner to ensure unobstructed visibility of the beacons from aircraft at any normal angle of approach, there shall be installed two such beacons at each level. Each beacon shall be mounted on the outside of diagonally opposite corners or opposite sides of the tower at the prescribed height.

10.4 On levels at approximately six-sevenths, five-sevenths, four-sevenths, three-sevenths, two-sevenths and one-seventh of the overall height of the tower one similar flashing 300 m/m electric code beacon shall be installed in such position within the tower proper that the structural members will not impair the visibility of this beacon from aircraft at any normal angle of approach. In the event these beacons cannot be installed in a manner to ensure unobstructed visibility of the beacons from aircraft at any normal angle of approach, there shall be installed two such beacons at each level. Each beacon shall be mounted on the outside of diagonally opposite corners or opposite sides of the tower at the prescribed height.

(OVER)

THIS FORM IS PART OF AND SHALL BE ATTACHED TO THE CURRENT INSTRUMENT OF AUTHORIZATION.

(SIDE LIGHTS)

11. At the approximate mid point of the overall height of the tower there shall be installed at least two 116- or 125-watt lamps (A21/TS) enclosed in aviation red obstruction light globes. Each light shall be mounted so as to ensure unobstructed visibility of at least one light at each level from aircraft at any normal angle of approach.

12. On levels at approximately two-thirds and one-third of the overall height of the tower, there shall be installed at least two 116- or 125-watt lamps (A21/TS) enclosed in aviation red obstruction light globes. Each light shall be mounted so as to ensure unobstructed visibility of at least one light at each level from aircraft at any normal angle of approach.

13. On levels at approximately three-fourths and one-fourth of the overall height of the tower, at least one 116- or 125-watt lamp (A21/TS) enclosed in aviation red obstruction light globe shall be installed on each outside corner of the structure.

14. On levels at approximately four-fifths, three-fifths and one-fifth of the overall height of the tower, at least one 116-or 125-watt lamp (A21/TS) enclosed in an aviation red obstruction light globe shall be installed on each outside corner of the structure.

15. On levels at approximately five-sixths, one-half, and one-sixth of the overall height of the tower, at least one 116- or 125-watt lamp (A21/TS) enclosed in an aviation red obstruction light globe shall be installed on each outside corner of structure.

16. On levels at approximately six-sevenths, five-sevenths, three-sevenths and one-seventh of the overall height of the tower at least one 116- or 125-watt lamp (A21/TS) enclosed in an aviation red obstruction light globe shall be installed on each outside corner of the structure.

17. On levels at approximately seven-eighths, five-eighths, three-eights and one-eighth of the overall height of the tower, at least one 116- or 125-watt lamp (A21/TS) enclosed in an aviation red obstruction light globe shall be installed on each outside corner of the structure.

18. On levels at approximately eight ninths, seven-ninths, five-ninths, one-third and one-ninth of the overall height of the tower, at least one 116- or 125-watt lamp (A21/TS) enclosed in an aviation red obstruction light globe shall be installed on each outside corner of the structure.

19. On levels at approximately nine-tenths, seven-tenths, one-half, three-tenths and one-tenth of the overall height of the tower, at least one 116- or 125-watt lamp (A21/TS) enclosed in an aviation red obstruction light globe shall be installed on each outside corner of the structure.

19.1 On levels at approximately ten-elevenths, nine-elevenths, seven-elevenths, five-elevenths, three-elevenths and one-eleventh of the overall height of the tower at least one 116- or 125-watt lamp (A21/TS) enclosed in an aviation red obstruction light globe shall be installed on each outside corner of the structure.

19.2 On levels at approximately eleven-twelfths, three-fourths, seven-twelfths, five-twelfths, one-fourth and one-twelfth of the overall height of the tower at least one 116- or 125-watt lamp (A21/TS) enclosed in an aviation red obstruction light globe shall be installed on each outside corner of the structure.

19.3 On levels at approximately twelve-thirteenths, eleven-thirteenths, nine-thirteenths, seven-thirteenths, five-thirteenths, three-thirteenths and one-thirteenth of the overall height of the tower at least one 116- or 125-watt lamp (A21/TS) enclosed in an aviation red obstruction light globe shall be installed on each outside corner of the structure.

19.4 On levels at approximately thirteen-fourteenths, eleven-fourteenths, nine-fourteenths, one-half, five fourteenths, three-fourteenths and one-fourteenth of the overall height of the tower at least one 116- or 125-watt lamp (A21/TS) enclosed in an aviation red obstruction light globe shall be installed on each outside corner of the structure.

20. All lighting shall be exhibited from sunset to sunrise unless otherwise specified.

21. All lights shall burn continuously or shall be controlled by a light sensitive device adjusted so that the lights will be turned on at a north sky light intensity level of about 35 foot candles and turned off at a north sky light intensity level of about 58 foot candles.

22. During construction of an antenna structure, for which obstruction lighting is required, at least two 116- or 125-watt lamps (A21/TS) enclosed in aviation red obstruction light globes, shall be installed at the uppermost point of the structure. In addition, as the height of the structure exceeds each level at which permanent obstruction lights will be required, two similar lights shall be displayed nightly from sunset to sunrise until the permanent obstruction lights have been installed and placed in operation, and shall be positioned so as to ensure unobstructed visibility of at least one of the lights at any normal angle of approach. In lieu of the above temporary warning lights, the permanent obstruction lighting fixtures may be installed and operated at each required level as each such level is exceeded in height during construction.

HIGH INTENSITY OBSTRUCTION LIGHTING SPECIFICATIONS FOR ANTENNA STRUCTURES

It is to be expressly understood that the issuance of these specifications is in no way to be considered as precluding additional or modified marking or lighting as may hereafter be required under the provisions of Section 303(q) of the Communications Act of 1934, as amended.

TOP LIGHTING

A. There shall be installed at the top of the antenna structure a white capacitor discharge omnidirectional light which conforms to FAA Specification L-866, High Intensity Obstruction Lighting Systems. This light shall be mounted on the highest point of the structure. If the antenna or other appurtenance at its highest point is incapable of supporting the omnidirectional light, one or more such lights shall be installed on a suitable adjacent support with the lights mounted not more than 20 feet below the tip of the appurtenance. The lights shall be positioned so as to permit unobstructed viewing of at least one light from aircraft at any normal angle of approach. The light unit(s) shall emit a beam with a peak intensity around its periphery of approximately 20,000 candelas during daytime and twilight, and approximately 4,000 candelas at night.

B. There shall be installed at the top of the skeletal or other main support structure three or more high intensity light units which conform to FAA Specification L-856, High Intensity Obstruction Lighting Systems. The complement of units shall emit a white high intensity light and produce an effective intensity of not less than 200,000 candelas (daytime) uniformly about the antenna structure in the horizontal plane. The effective intensity shall be reduced to approximately 20,000 candelas at twilight, and to approximately 4,000 candelas at night. The light units shall be mounted in a manner to ensure unobstructed viewing from aircraft at any normal angle of approach so that the effective intensity of the full beam is not impaired by any structural member of the skeletal framework. The units will normally be adjusted so that the center of the beam is in the horizontal plane.

INTERMEDIATE LIGHTING

C. At the approximate one-half level of the skeletal tower there shall be installed three or more high intensity light units which conform to FAA Specification L-856, High Intensity Obstruction Lighting Systems. The complement of units shall emit a white high intensity light and produce an effective intensity of not less than 200,000 candelas (daytime) uniformly about the antenna structure in the horizontal plane. The effective intensity shall be reduced to approximately 20,000 candelas at twilight, and to approximately 4,000 candelas at night. The light units shall be mounted in a manner to ensure unobstructed viewing from aircraft at any normal angle of approach, so that the effective intensity of the full beam is not impaired by any structural member of the skeletal framework. The normal angular adjustment of the beam centers above the horizontal shall be two degrees (2°).

D. At the approximate one-third and two-thirds levels of the skeletal tower there shall be installed three or more high intensity light units which conform to FAA Specification L-856, High Intensity Obstruction Lighting Systems. The complement of units shall emit a white high intensity light and produce an effective intensity of not less than 200,000 candelas (daytime) uniformly about the antenna structure in the horizontal plane. The effective intensity shall be reduced to approximately 20,000 candelas at twilight, and to approximately 4,000 candelas at night. The light units shall be mounted in a manner to ensure unobstructed viewing from aircraft at any normal angle of approach, so that the effective intensity of the full beam is not impaired by any structural member of the skeletal framework. The normal angular adjustment of the beam centers above the horizontal shall be two degrees (2°) at the one-third level and one degree (1°) at the two-thirds level.

E. At the approximate one-fourth, one-half and three-fourths levels of the skeletal tower there shall be installed three or more high intensity light units which conform to FAA Specification L-856, High Intensity Obstruction Lighting Systems. The complement of units shall emit a white high intensity light and produce an effective intensity of not less than 200,000 candelas (daytime) uniformly about the antenna structure in the horizontal plane. The effective intensity shall be reduced to approximately 20,000 candelas at twilight, and to approximately 4,000 candelas at night. The light units shall be mounted in a manner to ensure unobstructed viewing from aircraft at any normal angle of approach, so that the effective intensity of the full beam is not impaired by any structural member of the skeletal framework. The normal angular adjustment of the beam centers above the horizontal shall be three degrees (3°) at the one-fourth level, two degrees (2°) at the one-half level and one degree (1°) at the three-fourths level.

F. At the approximate one-fifth, two-fifths, three-fifths and four-fifths levels of the skeletal tower there shall be installed three or more high intensity light units which conform to FAA Specification L-856, High Intensity Obstruction Lighting Systems. The complement of units shall emit a white high intensity light and produce an effective intensity of not less than 200,000 candelas (daytime) uniformly about the antenna structure in the horizontal plane. The effective intensity shall be reduced to approximately 20,000 candelas at twilight, and to approximately 4,000 candelas at night. The light units shall be mounted in a manner to ensure unobstructed viewing from aircraft at any normal angle of approach, so that the effective intensity of the full beam is not impaired by any structural member of the skeletal framework. The normal angular adjustment of the beam centers above the horizontal shall be three degrees (3°) at the one-fifth level, two degrees (2°) at the two-fifths level, one degree (1°) at the three-fifths level and zero degrees (0°) at the four-fifths level.

G. At the approximate one-sixth, one-third, one-half, two-thirds and five-sixths levels of the skeletal tower there shall be installed three or more high intensity light units which conform to FAA Specification L-856, High Intensity Obstruction Lighting Systems. The complement of units shall emit a white high intensity light and produce an effective intensity of not less than 200,000 candelas (daytime) uniformly about the antenna structure in the horizontal plane. The effective intensity shall be reduced to approximately 20,000 candelas at twilight, and to approximately 4,000 candelas at night. The light units shall be mounted in a manner to ensure unobstructed viewing from aircraft at any normal angle of approach, so that the effective intensity of the full beam is not impaired by any structural member of the skeletal framework. The normal angular adjustment of the beam centers above the horizontal shall be three degrees (3°) at the one-sixth level, two degrees (2°) at the one-third level, two degrees (2°) at the one-half level, one degree (1°) at the two-thirds level and zero degrees (0°) at the five-sixths level.

H. All lights shall be syncronized to flash simultaneously at 40 pulses per minute. The light system shall be equipped with a light sensitive control device which shall face the north sky and cause the intensity steps to change automatically when the north sky illumination on a vertical surface is as follows:

1. Day to Twilight: Shall not occur before the illumination drops to 60 footcandles, but shall occur before it drops below 30 footcandles.

2. Twilight to Night: Shall not occur before the illumination drops to 5 footcandles, but shall occur before it drops to 2 footcandles.

3. Night to Day: The intensity changes listed in 1. and 2. above shall be reversed in transitioning from the night to day modes.

TEMPORARY LIGHTING

I. During construction of an antenna structure for which high intensity lighting is required, at least two lights shall be installed at the uppermost part of the structure. In addition, at each level where permanent obstruction lighting will be required, two similar lights shall be installed. Each temporary light shall consist of at least 1,500 candelas (peak effective intensity), syncronized to flash simultaneously at 40 pulses per minute. Temporary lights shall be operated continuously, except for periods of actual construction, until the permanent obstruction lights have been installed and placed in operation. Lights shall be positioned to ensure unobstructed viewing from aircraft at any normal angle of approach. If practical, the permanent obstruction lights may be installed at each level as the structure progresses.
NOTE: If battery operated, the batteries should be replaced or recharged at regular intervals to preclude failure during operation.

OPTIONAL LIGHTING

J. Antenna structures shall be equipped with:

1. High intensity lighting for daytime use and red lighting for nighttime use as specified in FCC Form 715; or
2. High intensity lighting, 24 hours a day, which conforms to FAA Specifications L-866 & L-856, High Intensity Obstruction Lighting Systems.

THIS FORM IS PART OF AND SHALL BE ATTACHED TO THE CURRENT INSTRUMENT OF AUTHORIZATION.